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EXAMINER

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ART UNIT PAPER NUMBER

3616

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Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

1. This office action is in response to the amendment filed 20 December 2005, in which claims 1, 5, 9, 10, 12, 17, 19, 23, and 26-28 were amended, claims 25 and 29-34 were canceled, and claims 35-43 were added.

Election/Restrictions

2. Newly submitted claims 35-38 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: applicant's disclosure is drawn to numerous species and inventions, and the originally claimed invention of this application was only drawn to a knee protection airbag. The addition of an upper torso airbag in combination with the knee protection airbag presents another embodiment that was not originally claimed.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 35-38 withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Information Disclosure Statement

3. One reference listed on the Information Disclosure Statement submitted 03 October 2005 is a duplicate of a citation listed on the PTO-892 mailed 03 October 2005, and has been crossed through.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 3, 4, 6, 8, 11, 12, 15-21, 23, 26, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilfert (3,951,427) in view of Fleck et al. (3,733,091). Wilfert discloses a vehicle comprising:

- Instrument panel (not specifically labeled, but including front wall construction sections #11, 12, and can be seen in figures 4, 5)
- Front seat (not labeled, but bottom cushion of seat can be seen in figures 4, 5) on which an occupant (for example, seen in dotted lines in figure 4) sits opposite the instrument panel
- Single knee protection airbag (including #17) having a storage position (can be seen in figure 5) and a deployed position (can be seen in figure 4)
- Inflator/generator (gas source of conventional construction not shown) able to inflate the airbag from the storage position to the deployed position (column 3, lines 56-59; column 4, lines 6-13)
- Airbag being arranged to substantially fill a space between the knees and lower extremities of the occupant when seated on the front seat and the instrument panel in the deployed position such that the airbag cushions only the knees and lower

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extremities of the occupant (can be seen in figure 4), such that the instrument panel provides support for the airbag (can be seen in figure 4)

- Airbag is shaped to conform to the shape of the knees of the occupant (can be seen in figure 4)
- The airbag provides a soft surface able to engage the lower extremities of the occupant (can be seen in figure 4)
- Mounting means (including manner in which airbag device is mounted to #12, as seen in figures 4, 5) for mounting the airbag device to the instrument panel
- Inflatable “tubular bolster” (including #17; can be seen in figures 4, 5)
- Crash sensor connected to the gas generator and able to detect an impact involving the vehicle (for example, by detecting deceleration) such that when an impact is detected, the gas generator is directed to inflate the airbag (column 4, lines 6-13), the airbag deploying from a stowed position (can be seen in figure 5) downward and rearward to the position entirely below the instrument panel such that it restrains forward and downward movement of an occupant situated in front of the instrument panel (can be seen in figure 4)

Wilfert does not disclose the airbag defining a plurality of interconnected, adjoining cells/chambers, aspiration means, or a vent, nor does Wilfert disclose the details of the airbag material. Also, while Wilfert discloses a protective layer (including #21) to cover the airbag in its stored position, Wilfert does not specifically disclose a housing.

Fleck et al. teach a motor vehicle (including vehicle body #10) comprising:

- Instrument panel (including #18)

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- Front seat (for example, #12) on which an occupant (for example, #14) sits opposite the instrument panel (best seen in figure 1)
- Knee protection airbag (including #26) having a storage position (best seen in solid lines in figure 1) and a deployed position (best seen in dotted lines in figure 1)
- Inflator/generator (including #20, 22) able to inflate the airbag with pressurized gas from the storage position to the deployed position and connected to the airbag via a gas conduit (including #22, 24)
- The airbag being able to substantially fill a space between the legs/knees of the occupant when seated on the front seat and the instrument panel in the deployed position (best seen in figure 1) such that the instrument panel provides support for the airbag (best seen in figure 1)
- The airbag comprises at least two pieces of inelastic plastic film (including #34, 36, 56; dacron and nylon are plastics, and plastic is inherently inelastic) having peripheral edges (including #38; peripheral edges of #56 not labeled), one of the pieces having an inlet port (including #40 and opens ends of #56) able to be used for inflow of inflating fluid
- Attachment means (including stitching) for attaching the pieces of film together at least at the peripheral edges (best seen in figures 2-5) to form a substantially sealed airbag
- Interconnected chambers (including #44, 46, 56) formed by attaching the pieces of film at location other than the peripheral edges (for example, at #42, 60)

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- The airbag comprises a single piece of inelastic plastic film (for example, including #36; dacron and nylon are plastics, and plastic is inherently inelastic) having an inlet portion (including #40) able to be used for inflow of inflating fluid
- The airbag comprises a first sheet of film (for example, including #34) and a member (for example, including #54) connecting with the first sheet of film and able to arrest the propagation of a tear in the first sheet of film, the member being a network of multi-directional material strips (best seen in figure 6)
- The airbag comprises a plurality of material sections (including #34, 36, 56) defining a plurality of interconnected cells/chambers/compartments (including #44, 46, 56)
- Vent (including #54, 68) able to vent inflating fluid from an interior of the airbag (through narrow openings defined by flaps; columns 2, 4)
- The airbag is able to conform to the shape of the knees of the occupant (best seen in figure 1)
- Housing (including #28) able to store the airbag and mounted in the vehicle in a position in which the airbag engages lower extremities of the occupant upon inflation (best seen in figure 1)
- The airbag being able to distribute impact force imposed by the lower extremities over the chambers (best seen in figure 1)
- The airbag provides a soft surface able to engage the lower extremities of the occupant (best seen in figure 1)

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- Mounting means (including manner in which inflator/generator is mounted to #18 and housing, as seen in figure 1) for mounting the airbag device to the instrument panel
- Aspiration means (including #50, 52, 54, 66, 68) for combining gas from the passenger compartment of the vehicle with pressurized gas from the gas generator and directing the combined flow of gas into the airbag (columns 2-3)
- Inflatable "tubular bolster" (including #26)

It would have been obvious to one skilled in the art at the time that the invention was made to modify the airbag of Wilfert such that it comprised a plurality of interconnected, adjoining cells/chambers as claimed in view of the teachings of Fleck et al. so as to better communicate inflation fluid and air throughout the airbag for more optimal inflation and protection of the occupant.

It would have been obvious to one skilled in the art at the time that the invention was made to modify the airbag of Wilfert such that it comprised the specific materials as claimed in view of the teachings of Fleck et al. so as to provide an airbag material that is best suited for receiving inflation gas and inflating to provide proper protection for the occupant, while being manufactured from inexpensive, yet durable, materials. Further, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

It would have been obvious to one skilled in the art at the time that the invention was made to modify the airbag of Wilfert such that it comprised aspiration means and a

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vent as claimed in view of the teachings of Fleck et al. so as to provide and maintain proper inflation of the airbag until such point that an occupant impacts the airbag and forces air out of the inflated cushion (Fleck et al.: columns 2-4).

It would have been obvious to one skilled in the art at the time that the invention was made to modify the airbag system of Wilfert such that it comprised a housing as claimed in view of the teachings of Fleck et al. so as to provide for better protection of the airbag in its stored position and for easier assembly of the airbag system into the vehicle.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilfert (3,951,427) in view of Fleck et al. (3,733,091), and further in view of Nicolson (3,760,414). Wilfert does not specifically disclose the sensor being an anticipatory sensor. Nicolson teaches a motor vehicle (for example, #1) comprising a safety restraint system (such as an airbag) and an anticipatory crash sensor system (including #3, 5, 6) able to forecast a crash between the vehicle and another object (for example, #2) prior to impact, the anticipatory crash sensor system being coupled to the safety restraint system and able to activate the safety restraint system prior to the crash (column 2, lines 27-34; column 4, lines 9-14; column 11, lines 66-67). It would have been obvious to one skilled in the art at the time that the invention was made to modify the vehicle of Wilfert with the anticipatory crash sensor system of Nicolson in order to reduce injury to vehicle occupants since the restraint system would be actuated prior to vehicle impact.

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7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilfert (3,951,427) in view of Fleck et al. (3,733,091), and further in view of Kirchoff (4,360,223). Wilfert discloses the airbag having an inlet port (for example, near connecting element #19) able to be used for inflow of inflating fluid (column 3, lines 56-59). Wilfert does not disclose the airbag having a vent, or details of the airbag material.

Kirchoff teaches a vehicle (including body #10) comprising:

- Instrument panel (including #16)
- Front seat (for example, #18) on which an occupant (for example, occupant in figure 1) sits opposite the instrument panel (best seen in figure 1)
- Knee protection airbag (including #28) having a storage position (best seen in figure 2) and a deployed position (best seen in figures 1, 3)
- Inflator (including #26) able to inflate the airbag from the storage position to the deployed position (including #22, 24)
- The airbag being able to substantially fill a space between the knees of the occupant when seated on the front seat and the instrument panel in the deployed position (best seen in figure 1)
- The airbag comprises inelastic plastic film (including #28; nylon is a plastic, and plastic is inherently inelastic) and has an inlet port (not specifically shown, but would be at the open end of airbag #28 where it connects to inflator #26; best seen in figures 2, 3) able to be used for inflow of inflating fluid, and a variable outlet vent (including #32, 32', 34) comprising pressure responsive means for

controlling opening of the vent to control flow of gas through the vent in response to pressure in the airbag (column 3)

It would have been obvious to one skilled in the art at the time that the invention was made to modify the airbag of Wilfert such that it comprised a variable outlet vent as claimed in view of the teachings of Kirchoff so as to insure a predetermined gas pressure within the airbag (Kirchoff: column 3).

It would have been obvious to one skilled in the art at the time that the invention was made to modify the airbag of Wilfert such that it comprised specific material as claimed in view of the teachings of Kirchoff so as to provide an airbag material that is best suited for receiving inflation gas and inflating to provide proper protection for the occupant, while being manufactured from inexpensive, yet durable, material. Further, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilfert (3,951,427) in view of Fleck et al. (3,733,091), and further in view of Lohr et al. (3,900,210). Wilfert does not disclose the airbag comprising an inner airbag and an outer airbag, nor the material of the airbag. Lohr et al. teach an airbag (best seen in figure 1) comprising an outer airbag (including #4) made of at least one layer of material and an inner airbag (including #2) made of at least one layer of material and arranged to fill an interior volume of the outer airbag when inflated (best seen in figure 1). It would

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have been obvious to one skilled in the art at the time that the invention was made to modify the airbag of Wilfert with the inner and outer airbag arrangement of Lohr et al. in order to dissipate the total amount of energy over a period of time and reduce the sound level of inflation, as well as to reduce heat and smoke associated with the use of an inflator and provide a redundant advantage in the event that one airbag fails (Lohr et al.: column 1). Further, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

9. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilfert (3,951,427) in view of Fleck et al. (3,733,091), and further in view of Sobkow (3,702,706). Wilfert does not specifically disclose the internal pressure of the airbag after inflation. Sobkow teaches an inflatable airbag (including #38) deployed in front of an occupant's knees (including #44), the airbag being of the high pressure type and attaining an internal pressure in excess of 10 psi (approximately 0.69 bar) after inflation (column 4). While Sobkow does not specifically teach an internal pressure in excess of 1 bar, it would have been obvious to one skilled in the art at the time that the invention was made to modify the airbag of Wilfert with the high pressure of Sobkow in order to provide an appropriate level of inflation for the region of the occupant's body being protected, and in order to allow for the use of a less expensive, smaller size gas generator with a lower inflation noise level (Sobkow: column 4), with the specific amount

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of the internal pressure being a matter of obvious design choice and requiring only routine skill in the art to determine the optimum pressure level.

Allowable Subject Matter

10. Claims 39-44 are allowed.
11. Claims 9, 10, 13, 14, 22, and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

12. Applicant's arguments filed 20 December 2005 have been fully considered but they are not persuasive.

With respect to claim 2, the Nicolson reference does indeed teach an anticipatory crash sensor system that forecasts a crash situation and inflates the airbag prior to the crash, as set forth in the passages pointed out by the examiner in the office action.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura B. Rosenberg whose telephone number is (571) 272-6674. The examiner can normally be reached on Monday-Friday 7:00am-3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Dickson can be reached on (571) 272-6669. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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